

molecular weight fractions of a molecular weight in the range of about 4,000 to about 10,000 daltons, (2) a Yin-Wessler of at least 40, and (3) a ratio of Yin-Wessler to USP titer in the range of 3 to 5, and the physiologically acceptable salts thereof, which mixture of fractions have improved antithrombotic activity in vivo which is higher than that of heparin and a whole anticoagulation activity lower than that of heparin, and said method controlling thrombosis by selectively inhibiting coagulation factor Xa while also having a whole anticoagulation effect.

I-1 <sup>5</sup>155. The method of claim <sup>4</sup>154 wherein the administration is by injection or infusion to the patient.

<sup>6</sup>156. The method of claim <sup>5</sup>155 wherein the administration by injection is sub-cutaneous.

<sup>7</sup>157. The method of claim <sup>6</sup>156 wherein the dosage administered sub-cutaneously is from about 1,000 to about 25,000 Yin-Wessler units per ml.

<sup>8</sup>158. The method of claim <sup>5</sup>155 wherein the administration by injection is intravenous.

<sup>9</sup>159. The method of claim <sup>8</sup>158 wherein the dosage administered discontinuously intravenously is from about 1,000 to about 25,000 Yin-Wessler units per ml per 25 hours.

<sup>10</sup>160. The of method of claim <sup>4</sup>154 wherein the administration is intramuscularly in a dosage of from about 1,000 to about 25,000 Yin-Wessler units per ml.

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161. A therapeutic composition for controlling thrombosis and decreasing hemorrhaging risks which comprises a therapeutically acceptable carrier and heparinic mucopolysaccharide fractions having constituents of a molecular weight not in excess of about 10,000 daltons, which fractions have (1) a mixture of lower molecular weight fractions in the range of about 2,000 to about 4,000 daltons with higher molecular weight fractions of a molecular weight in the range of about 4,000 to about 10,000 daltons, (2) a Yin-Wessler of at least 40, and (3) a ratio of Yin-Wessler to USP titer in the range of 3 to 5, and the physiologically acceptable salts thereof, which mixture of fractions have improved antithrombotic activity in vivo which is higher than that of heparin and a whole anticoagulation activity lower than that of heparin.

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162. The therapeutic composition of claim ~~161~~<sup>11</sup> which is a solution.

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163. The therapeutic composition of claim ~~162~~<sup>12</sup> wherein the heparinic mucopolysaccharides fractions are in solution in a concentration of about 1,000 to 100,000 Yin-Wessler units per ml.

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164. The therapeutic composition of claim ~~163~~<sup>13</sup> which is a solution of the mucopolysaccharides in a concentration of about 5,000 to about 50,000 Yin-Wessler units per ml.

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165. The solution of claim ~~162~~<sup>12</sup> which is apyrogenic.

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166. The solution of claim ~~165~~<sup>15</sup> which is sterile.